RMRS Rocky Mountain Remediation Services LLC
project management

Consolidated Water Treatment Facility

Operating Procedures

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CONSOLIDATED WATER TREATMENT FACILITY

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INFORMATION ONLY

Rocky Flats Environmental Technology Site

4-S72-ENV-OPS-FO.46

REVISION 0

SYSTEM NORMAL OPERATIONS
OIL-ABSORBENT MEDIA DRUM UNIT
CONSOLIDATED WATER TREATMENT FACILITY

APPROVED BY Alan M Parker, Alan Parker 5/16/96

RMRS Vice President, Environmental Restoration — Print Name — Date

DOE RFFO/ER Concurrence on file oYes o No o NA

Environmental Protection Agency Approval Received o Yes o No o NA

Responsible Organization Environmental Restoration Program Division Effective Date 5/20/96

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE

Environmental Restoration Operations Management
Quality Assurance

USE CATEGORY 3

ORC review not required

The following have been incorporated in this revision
N/A

Periodic review frequency 1 year from the effective date

LIST OF EFFECTIVE PAGES

Pages	Effective Date	Change Number
1-9		

TOTAL NUMBER OF PAGES 9

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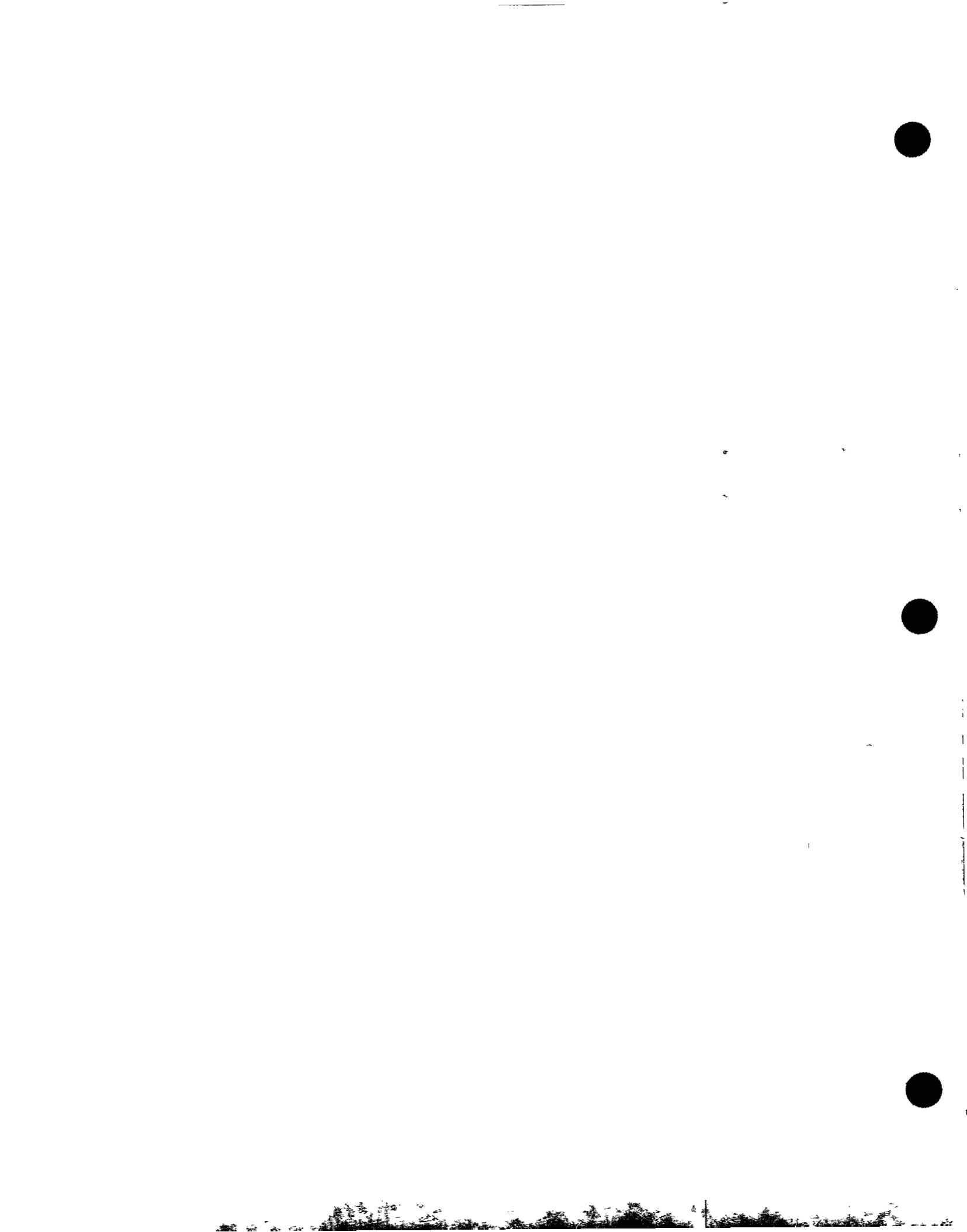

1 PURPOSE

This procedure provides operating instructions for the Oil-Absorbent Media Drum Unit which is a skid-mounted unit used to pre treat water contaminated with oil and grease as the contaminated water is unloaded from a tanker truck to the CWTF Influent Storage Tanks (T-200 T-201 or T 202)

2 SCOPE

This procedure applies to all Environmental Operations Management employees and subcontractors

This procedure addresses normal operations of the Oil Absorbent Media Drum Unit

3 OVERVIEW

The Oil Absorbent Media Drum Unit may be used to pre treat oily wastewater being off loaded from a tanker truck at the CWTF prior to routing the water to one of the Influent Tanks The unit is a mobile skid mounted unit and when in use the unit will be located in the Building 891 truck dock The unit may be moved by fork-lift and when the unit is not in use it may be located within Building 891 in the Building 891 truck dock or in another appropriate area as determined by the Responsible Project Manager

The Oil Absorbent Media Drum Unit will be labeled to indicate the use of the drum and the Oil Absorbent Media Drum Log Sheets (Appendix 1) will be maintained in the Building 891 Office so that appropriate waste disposal decisions can be made for spent clay absorbent

The skid mounted Oil Absorbent Media Drum Unit consists of a 1 5 HP centrifugal pump with a maximum discharge pressure of 75 psi a flow meter. a pressure gauge a media drum and absorbent media The media drum is constructed of carbon steel has an inner diameter of approximately 24 inches and is designed for a media bed depth of 1 75 ft The media drum has been hydrotested to 90 psi for a maximum recommended operating pressure of 75 psi and is designed for a maximum flow rate of 12 gpm

The drum is filled with 5 5 ft^3 of oil-absorbent media and per the product information sheet the media will absorb up to 60% of its weight in oil and grease The following table illustrates the expected pressure drops at various operating flow rates for the current media

Table 1 Aquatec PC 24 Drum filled with Clarion PM-100 Absorbent

Flow Rate (gpm)	Superficial Flow Velocity (gpm/ft^2)	Contact Time in Drum (minutes)	Fresh Media Total Pressure Drop Across the Media Bed Depth (1 75 ft) (psi)	Spent Media Total Pressure Drop Across the Media Bed Depth (1 75 ft) (psi)
6	1 91	6 9	1 3	14 6
7	2 23	5 9	1 5	18 1
8	2 55	5 1	1 7	19 8
9	2 87	4 6	2 0	24 1
10	3 18	4 1	2 1	25 8
11	3 50	3 7	2 6	29 2
12 (max)	3 82	3 4	2 8	32 7

3 OVERVIEW (continued)

As seen in Table 1, as the media absorbs oil the pressure drop across the media increases For instance at 8 gpm, the pressure drop across fresh media would be approximately 2 psi whereas the pressure drop across spent media would be approximately 20 psi.

The increase in the pressure drop across the clay media as oil is absorbed will be monitored and recorded (refer to Appendix 1) When the media is spent (as determined by the pressure drop at a particular operating flow rate - Table 1), the media should be changed out by unbolting the drum lid and replacing the spent media with fresh media. It is recommended that fresh media be backwashed prior to use

4 LIMITATIONS AND PRECAUTIONS

- The Maximum Operating Pressure of the Oil-Absorbent Media Drum is 75 psi
- The Maximum Operating Flow Rate for the Oil-Absorbent Media Drum is 12 gpm

5 PREREQUISITES

5 1 Planning and Coordination

CWTF Responsible Manager

[1] Ensure that pre-treatment operation is listed on the Plan of the Day (POD) meeting, and determine which Influent Tank will receive the water

[2] Discuss with the Lead Operator and Operator(s) the influent characteristics of the water to be processed.

Lead Operator/Operator

[1] Attend a pre-shift safety briefing covering plant operations prior to the initiation of this procedure

[2] Ensure that the chosen Influent Tank has adequate capacity to accept the water to be transferred from the tanker truck, and estimate the time needed to pre-treat the tanker water when operating at 8 gpm (refer to Appendix 1, Oil-Absorbent Media Drum Log Sheet)

[3] Ensure that the Oil-Absorbent Media Unit is properly positioned in the Building 891 truck dock prior to the arrival of the tanker

[4] When the tanker arrives direct the driver to park the tanker truck in the Building 891 truck dock.

Health and Safety Specialist

[1] Conduct a pre-shift safety briefing covering plant operations prior to the initiation of this procedure

6 INSTRUCTIONS

6 1 Oil-Absorbent Media Drum Unit Manual Operation

Operator

[1] Verify that the tanker truck wheels are chocked

[2] Inspect all transfer hoses

[3] Connect the appropriate transfer hose from the tanker truck to the suction side of the centrifugal pump

[4] Connect the appropriate transfer hose from the discharge side of the media drum to the truck dock influent camlock labeled INFLUENT TO TANKS 200 201 OR 202

[5] OPEN V-103 Truck Dock Influent

[6] OPEN the Media Drum influent 1 inch ball valve

[7] OPEN the Media Drum effluent 2 inch ball valve

[8] OPEN the manway (or vent as appropriate) on the tanker truck

[9] OPEN the discharge valve on the tanker

[10] OPEN the appropriate Influent Tank valve as follows
For transfer of water to T 200, OPEN HVA-200
For transfer of water to T 201 OPEN HVA 201
For transfer of water to T 202 OPEN HVA-202

[11] Plug in the centrifugal pump

[12] Turn the local receptacle switch on and begin the transfer of water from the tanker truck to the appropriate influent storage tank

[13] Adjust the ball valve to ensure that approximately 8 gpm of water is being routed to the drum

Note 1 *The maximum flow rate for the unit is 12 gpm The minimum flow rate for the centrifugal pump is 0 5 gpm*

Note 2 *The recommended hydraulic loading rate is a maximum of 3 4 gpm/ft2 and the recommended bed contact time is 2 5 minutes A longer contact time will not adversely affect unit performance*

[14] Monitor the Oil Absorbent Media Drum Unit immediately after start up 1/2 hour after start up 1 hour after start-up and each hour thereafter and record readings on the Oil Absorbent Media Drum Log Sheet (Appendix 1)

[15] Adjust the flow rate to the drum as necessary to balance flow rate versus pressure drop

Note 1 *The pressure across the media bed will increase as the absorbent media absorbs oil which may in turn decrease the pump flow rate*

6 1 Oil-Absorbent Media Drum Unit - Manual Operation (continued)

Operator

[16] The pump is not equipped with an automatic shut-off, therefore it is necessary to closely monitor the water transfer An operator should be in attendance during the last 15 minutes of the water transfer to turn the pump off when the tanker is empty

Note *During Step 5 1 Planning and Coordination, a calculation was made to determine the anticipated off-load time when running at 8 gpm. This information is recorded on the Oil-Absorbent Media Drum Log Sheet (Appendix 1)*

[17] WHEN the pump begins to cavitate (which indicates that the tanker is empty), THEN shut the local receptacle switch OFF.

Note 1 *Try to ensure that as much water as possible has been pumped from the tanker truck transfer hose prior to shutting the pump OFF*

[18] WHEN the tanker is empty and after the local receptacle switch been shut OFF THEN CLOSE the following
- Tanker discharge valve
- Tanker manway

[19] Disconnect the tanker truck transfer hose from the tanker truck and ensure that the disconnected end remains elevated

[20] Connect the tanker truck transfer hose to a container filled with domestic water, prime the transfer hose if necessary turn the local receptacle switch ON (which will energize the centrifugal pump), and purge the Oil-Absorbent Media Drum Unit with approximately 100 gallons of domestic water

[21] Shut the local receptacle switch OFF and unplug the pump

Note 1 *Try to ensure that as much water as possible has been pumped from the transfer hose prior to shutting the pump OFF*

[22] CLOSE the following valves

- Media Drum influent 1-inch ball valve
- Media Drum effluent 2-inch ball valve
- V-103

[23] Disconnect the pump suction and discharge hoses, and catch any water that drains from the transfer hoses into a bucket

[24] Transfer any collected water into the appropriate Influent tank via the Building 891 sump

[25] CLOSE the appropriate tank influent valve
For T-200, CLOSE HVA-200
For T-201 CLOSE HVA-201
For T-202, CLOSE HVA-202

7 POST PERFORMANCE ACTIVITY

CWTF Responsible Manager

[1] Ensure that the original and one copy as required of the following quality assurance (QA) records are transmitted to the ERPD Project File Center (PFC) in accordance with 2 G18-ER-ADM-17 01 Records Capture and Transmittal

- Facilities Operations Log(s)
  Process Flow Data Log(s)
- CWTF Operations Log Book
  Qualification/Training Documentation
  Occurrence Reports

Submission of record copies to the ERPD PFC is in accordance with Administrative Record requirements as defined in 2 S65 ER ADM-17 02, Administrative Record Document Identification and Transmittal

There are no non-QA records generated by this procedure

8 REFERENCES

Price Pump Company Pump Curve Model Number HP75 BN-4 75

Specification Sheet on the Aquatec PC 24 PM100 Pressure Drum

Consolidated Water Treatment Facility (CWTF) Health and Safety Plan

1 77000 RM 001 Records Management Guidance for Records Sources

2 G18 ER ADM-17 01 Records Capture and Transmittal

2 S65 ER-ADM 17 02 Administrative Record Document Identification and Transmittal

APPENDIX 1
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CONSOLIDATED WATER TREATMENT FACILITY
OIL-ABSORBENT MEDIA DRUM LOG SHEET

Source of the Oily Wastewater _____

Hazardous Waste Codes Associated with the Oily Water (if applicable) _____

Oily Wastewater to be pre treated and routed to Influent Tank _____

Estimated Quantity of Oily Wastewater _____ (gallons)

Estimated Quantity of Oil/grease in Wastewater (if possible) _____

Estimated Time to Off Load Tanker if operating at 8 gpm _____

Date _____

Time	Flow Rate to Drum (gpm)	Pressure at Drum Influent (psi)	Remarks	Initials

	Initials
Drum Totalizer End	
Drum Totalizer Start	
Gallons Processed	
Total Run Time (minutes)	